Patent Claims

(Chinese Patent No. CN 1203989A)

(A ceramic beads/particles, glass beads reflective marker band and method for its preparation)

1. A ceramic beads/particles, glass beads reflective marker band which is composing of glass micro-beads (7), the characteristics of which are: The reflective marker band is consisting of a mixture of ceramic beads/particles (3) which can produce a pure white visual effect, white glass beads of sodium fluorosilicate (8), and glass beads which can provide directional reflective function (4); the ratio of the three types of beads are depending on the whiteness and light reflection requirements of the marker band; the directionally reflective glass beads (7) are embedded between the beads in the bead mixture.

2. A reflective marker band as in Claim 1, the characteristics of which are that: The diameters of the ceramic beads/particles (3), glass beads (4), and white sodium fluorosilicate glass beads (8) are all 1 ~ 3 mm; the diameter of glass beads (7) is 20 ~ 80 mesh; glass beads (4) is silver/aluminum plated, and is capable of providing directional reflection, with a reflective index of over 1.5.

3. A reflective marker band as in Claim 1, the characteristics of which are that: The said ceramic beads/particles (3) are block (square) ceramic particles.

4. A reflective marker band as in Claim 1, the characteristics of which are that: The color of the said ceramic beads/particles (3) may be any color that is appropriate for traffic signs.

5. A reflective marker band as in Claim 1, the characteristics of which are that: The said marker band may be prepared into a belt shaped or block shaped products; it may be script characters or patterns, or may be belt or block products composed of ceramic blocks and glass beads.

6. Method for preparing a ceramic beads/particles, glass beads reflective marker band as in Claim 1, the characteristics of which are: It involves processes in the following order:

a. Coating a water soluble adhesive on a paper substrate;

b. After mixing ceramic beads/particles, glass beads, and white sodium fluorosilicate beads according to a certain ratio, it is coated over the paper substrate with a water soluble adhesive, the thickness of soluble adhesive on the paper substrate is controlled such that it is below one half the diameter of the beads, allowing the beads to expose more than one half of its diameter over the surface of the water soluble adhesive;

c. After the beads are secured on the water soluble adhesive, glass micro beads are sprinkled in the gaps between the beads adhered to the water soluble adhesive.

7. Method for preparing a reflective marker band as in Claim 6, the characteristics of which are: The thickness of the water soluble adhesive coated on the paper is controlled to be 1/3 ~ 2/5 of the diameter of the beads, allowing 3/5 ~ 2/3 of the diameter of the beads adhered to the paper substrate exposed over the

surface of the water soluble adhesive.

8. Method for preparing a reflective marker band as in Claim 1, the characteristics of which are: It involves processes in the following order:

a. Prepare plastic coated Kraft paper to a required standard thickness in a plastic mold, when it is heated to 130°C in a drying tunnel, the plastic is softened and become sticky;

b. After mixing ceramic beads/particles, glass beads, and white sodium fluorosilicate beads according to a certain ratio, it is applied over the softened plastic coated Kraft paper substrate;

c. It is heated again by passing through another drying tunnel to allow the beads to sink into the plastic; the portion that sunk in is not exceeding one half of the diameter of the beads; allowing over one half of the diameter of the beads adhered to the Kraft paper to be exposed over the surface of the plastic;

d. After the beads are secured on the softened plastic, glass micro beads are sprinkled in the gaps between the beads adhering to the plastic material.

9. Method for preparing a reflective marker band as in Claim 8, the characteristics of which are: The portion of the beads sinking into the plastic is controlled to be 1/3 ~ 2/5 of the diameter of the beads, allowing 3/5 ~ 2/3 of the diameter of the beads adhered to the Kraft paper substrate exposed over the surface of the plastic material.

10. Method for preparing a reflective marker band as in Claim 8, the characteristics of which are: After heating the plastic coated Kraft paper, the ceramic beads/particles (3), glass beads (4), and white sodium fluorosilicate glass beads (8) are securely bonded into an inseparable body, allowing 2/5 ~ 1/3 of the diameter of the beads to be exposed.